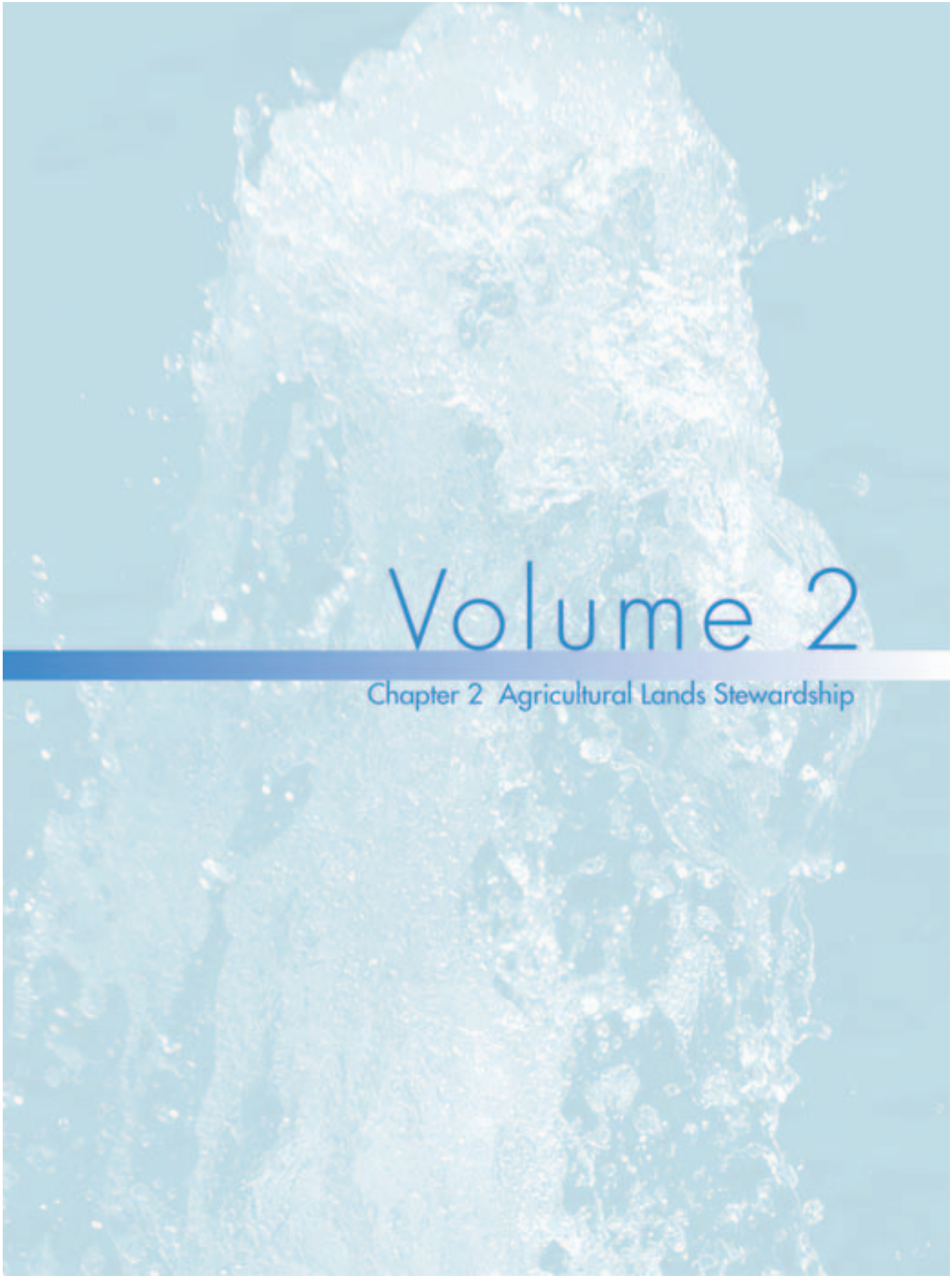

Volume 2

Chapter 2 Agricultural Lands Stewardship

Through agricultural lands stewardship, farm and ranch landowners produce public environmental benefits in conjunction with the food and fiber they have historically provided while keeping land in private ownership. (DWR photo)

Chapter 2 *Agricultural Lands Stewardship*

Agricultural lands stewardship broadly means conserving natural resources and protecting the environment by land managers whose stewardship practices conserve and improve land for food, fiber, watershed functions, soil, air, energy, plant and animal and other conservation purposes. Agricultural lands stewardship also protects open space and the traditional characteristics of rural communities. Moreover, it helps landowners maintain their farms and ranches rather than being forced to sell their land because of pressure from urban development. For this paper, "agricultural lands stewardship" means farm and ranch landowners – the stewards of the state's agricultural lands – producing public environmental benefits in conjunction with the food and fiber they have historically provided while keeping land in private ownership. This paper describes methods used to encourage implementation of stewardship practices.

This strategy is focused on agricultural land (cropped and grazed land) as defined by the California Land Conservation (Williamson) Act administered by the California Department of Conservation Division of Land Resource Protection. Other resource-based land uses, such as forestry and mining, are addressed by the Watershed Management strategy in Chapter 25, Volume 2. Agricultural land stewardship can take place on a particular parcel of land, on multiple parcels in one landowner's possession, or in an integrated manner on agricultural lands regionally or statewide. The goal of this approach is to promote sustainable agricultural practices with an economic return, while managing these productive lands for multiple benefits, including water management improvements. Box 2-1 shows examples of agricultural lands stewardship practices.

There are many ways that agricultural lands can be profitably managed. Crop lands can be managed to reduce or avoid stream bank erosion or stormwater runoff. Stream bank stabilization may include a buffer strip of riparian vegetation which slows bank erosion and filters drainage water from the fields. These measures can minimize or reduce the effects of agricultural practices on the environment and help meet governmental regulatory requirements while also reducing long-term maintenance problems for the landowner.

Stream bank protection is often needed when stream configuration is modified. Use of willow mattresses helps protect these reshaped stream banks. The willows grow into a stable plant community that provides food, habitat, and overhanging shade which helps maintain cool stream water temperature for fish. Other fish friendly techniques, such as the use of logs and overhangs are also incorporated into stream bank protection to provide shade for fish. Some portions of the property may be left untouched to allow for natural flooding. Removing non-native plants, such as mugwort, vinca and other exotics, enables native plants to become established. Combining these measures along stream banks avoids the need to use environmentally damaging riprap.

Other agronomic practices include planting cover crops to encourage beneficial insects and reducing or eliminating the need for pesticides, using recycled compost and other sources for fertilizer, and reusing waste water for irrigation. Farm ponds contribute to flood management and groundwater recharge as well as nesting and feeding habitat for various species of waterfowl and terrestrial animals. Farm ponds also can be used to help correct field drainage problems and capture wastewater. Agricultural pond management for water quality also may be a source of water for wildlife with appropriate water quality management. Wetlands can be created on farmland by incorporating rice straw into the soil after harvest.

Fencing can be installed to keep cattle out of creeks. Installing fish screens on ditches prevents entrapment of fish. Water diversions can be designed to operate without creating obstacles to migrating fish.

Crop idling is an agronomic practice to benefit the soil or for other management purposes. Crop idling may be used in conjunction with drought management programs. Drought payments to farmers could be used on farm-related investments, purchases and debt repayment, or may be spent or invested outside the community. Crop idling that is strictly for the purpose of water transfers is discussed in Chapter 26 in Volume 2, Other Resource Management Strategies.

Integrated on-farm drainage management (IFDM) can be used to protect and enhance farmland, wildlife and water resources in drainage problem areas. The goal of IFDM is to eliminate the need for discharging subsurface drainage water from farms into waterways or evaporation ponds. The IFDM system manages irrigation water on salt-sensitive high-value crops and reuses subsurface drainage and tailwater on increasingly salt-tolerant crops. Biological filters, drainage and tail water systems, crop management and salt harvesting in an evaporation system improve water use efficiency, provide for the use of concentrated drainage water, and eliminate the need to dispose of agricultural drainage water. This approach to the management of agricultural lands affected by saline water and perched water tables has primarily been used on the west side of the San Joaquin Valley. It offers a temporary alternative to retirement of agricultural lands.

Agricultural Lands Stewardship Initiatives

Agricultural lands stewardship is not a new concept. Under various names, it has been practiced and encouraged by the California Department of Conservation's programs, and the U.S. Department of Agriculture (USDA) through the Natural Resource Conservation Service and various nongovernmental entities for many years. The California Resource Conservation Districts (RCDs), and other entities, specialize in working with private landowners in watershed management and coordination strategies. Governmental land acquisition programs are not agricultural stewardship because they take farm lands out of production. These programs are limited because they

Box 2-1 Examples of Agricultural Lands Stewardship Practices

- **Wetland Restoration –** Wetland acreage improves water quality by filtering out pollution and sediments. It also helps flood management by slowing the flow of water. Healthy wetlands are indispensable for recharging underground aquifers and providing specific wildlife habitat.
- **Shallow-Water Wildlife Areas –** Shallow water areas provide habitat and water for wildlife. Temporary rice field habitat also provides resting and feeding grounds for waterfowl and shorebirds and related terrestrial species. Rice field flooding speeds the decomposition of rice straw, reduces air pollution, improves soil fertility and helps with the decomposition of agricultural chemicals.
- **Windbreaks –** Rows of trees or shrubs along field boundaries help control soil erosion, conserve soil moisture, improve crop protection, provide livestock shelter and wildlife habitat, reduce drainage water, and increase carbon sequestration (removal of carbon dioxide from the atmosphere).
- **Irrigation Tailwater Recovery –** Collection, storage and transportation facilities help capture and reuse irrigation runoff water to benefit water conservation and off-site water quality. [See Chapter 3 in Volume 2, the Agricultural Water Use Efficiency strategy]
- **Filter Strips, Grassed Waterways, Contour Buffer Strips –** These are practices to reduce erosion and provide water quality protection, with some wildlife benefits depending on management.
- **Conservation Tillage –** Tillage of soils increases water infiltration and soil water conservation, reduces erosion and water runoff, sequesters carbon, and improves soil ecosystem and habitat quality.
- **Noxious Weed Control –** This practice establishes self-sustaining populations of "control organisms" to control or prevent weed infestations. Mowing, discing, plowing, and grazing are some of the practices that can be used for noxious weed control.
- **Riparian Buffers –** Areas of trees, shrubs, and grasses adjacent to streams or drains help filter runoff by trapping sediments, nutrients, and pesticides. Riparian buffers also provide wildlife habitat.
- **Livestock Access –** This practice restricts or controls livestock access to surface waters to reduce sediment and nutrient nonpoint source pollution.

affect only small areas. Since these acquisition programs only can affect a small portion of agricultural lands, stewardship is increasingly considered by governmental and nongovernmental organizations for protecting natural resources while keeping the lands in productive private ownership.

A range of private and public programs and initiatives already exist that fit the stewardship model (see Box 2-2). Many public programs provide technical assistance on what crops to plant, and how to plant, cultivate and irrigate them. Others provide technical help on wildlife-friendly farming techniques for wildlife and aquatic ecosystems. Additional types of programs cover soil, water, and habitat conservation planning. These efforts can identify suitable areas for farming and habitat management. Urban planning programs can also be used to avoid agricultural land fragmentation and permanent loss of valuable agricultural land because of urban development (see the urban land use management strategy). And finally, there are programs that limit or cease commercial agricultural use to promote wetlands and other wildlife sensitive areas, while keeping lands in private ownership and stewardship.

The following examples describe a range of stewardship programs.

The CALFED Working Landscapes Subcommittee

The Bay-Delta Public Advisory Committee established a Working Landscapes Subcommittee to advise it in the formulation of a working lands management approach for Bay-Delta Programs (see Box 2-3). The Working Landscape Subcommit-

Box 2-2 Initiatives that Exemplify Agricultural Lands Stewardship Strategy

- **Proposition 50 Ecosystem Restoration Program's Proposed Working Landscapes Grants.** Allocated not less than $20 million "for projects which assist farmers in integrating agricultural activities with ecosystem restoration." These funds could be used as "matching funds" with the Farm Bill, thus leveraging State money with federal money.
- **USDA Natural Resources Conservation Service**
  - **Conservation Security Program** offers incentives and rewards to growers who implement resource conservation plans for parts or all of their lands.
  - **Conservation Technical Assistance Program** provides technical assistance to design and implement stewardship practices.
  - **Wetland Reserve Program** offers incentives to restore wetlands in order to replace marginal croplands to help restore the biological diversity of plant and animal species, particularly, migratory waterfowl.
  - **Grasslands Reserve Program** provides rental payments and easements on working grasslands in exchange for protection against conversion to other land uses.
  - **Farm and Ranchland Protection Program** is used to secure easements to prevent conversion from agricultural land to urban land use.
  - **Wildlife Habitat Incentives Program** provides up to 75 percent cost-share to reimburse participants for installing practices beneficial to wildlife.
- **Department of Water Resources Flood Protection Corridor Program.** Grants for nonstructural flood management that enhance wildlife habitat or protect agricultural uses on private lands.
- **Department of Fish and Game Private Lands Management Program.** Pays ranchers and farmers to improve habitat for wildlife through fishing and hunting.
- **Wildlife Conservation Board Rangeland, Grazing Land and Grassland Protection Act of 2002.** Grants to prevent rangeland conversion to more intensive uses, and to improve grazing and wildlife.
- **The Farmland Mapping and Monitoring Program (FMMP).** Managed by the DOC, produces maps and statistical data used for analyzing impacts on California's agricultural resources. The maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance.

tee seeks to provide the committee with creative and practical strategies that: (1) enhance the sustainability of California agriculture; and (2) provide for participation of local communities, landowners and managers; while (3) significantly fulfilling the CALFED Record of Decision to restore ecological health and improve water management for beneficial use of the Bay-Delta system while minimizing harm to agriculture.

The Farm Security and Rural Investment Act of 2002

The reauthorized national Farm Bill 2002 provides several new and traditional agricultural conservation programs that exemplify an agricultural lands stewardship strategy. All programs are voluntary. Many programs may include technical assistance, financial incentives, or temporary and permanent set-aside payments for various purposes.

Potential Benefits

Agricultural lands stewardship can be included as an integral component of regional integrated resource planning, including watershed planning and implementation. Agricultural lands stewardship can use stewardship practices to protect the health of environmentally sensitive lands, recharge groundwater, improve water quality, provide water for wetland protection and restoration, reduce costs to the State for flood management, and aid riparian reforestation and management projects. Lands can also be managed to improve water management, urban runoff control, water storage, conveyance and for groundwater recharge. These stewardship practices are attractive since they don't rely on construction of major facilities.

Agricultural land stewardship can be part of a regional strategy of urban growth management. Agricultural lands provide public benefits for floodplain management, scenic open space, wildlife habitat, and defined boundaries to urban growth. Stewardship provides the rural counterpart to urban efforts to encourage more water efficient development patterns. It also can minimize fragmentation of agricultural lands by development that can decrease productivity and harm the ecosystem.

Potential Costs

Governmental and nongovernmental entities are seeking ways to secure funds for conservation practices that can be part of stewardship. In general, there is agreement by economists on three questions: 1) What are the direct costs for supporting stewardship programs? 2) What are the common ways to measure the costs for the wide range of environmental values? 3) What current level of investment is needed to sustain stewardship for the long term?

Developing stewardship costs is similar to estimating costs of managing lands to avoid environmental impacts such as air and water pollution, or to provide wildlife habitat or secure food and fiber production. Stewardship is a way of doing business and it should be a part of an economic model that shows a return on investment by placing a value on healthy communities and their quality of life. In addition, agricultural lands stewardship helps avoid costs associated with urban land use. Not only are there cost savings by avoiding expansion of infrastructure, but there are avoided costs for flood damage reduction measures and urban runoff. These costs have not been quantified for broad reference and application.

Some legislative proposals are seeking to provide annual payments for conservation benefits that may be part of private lands management programs. Experience and recent trends suggests that many California agricultural lands owners may participate in some agricultural lands stewardship programs if the annual rents they receive are about $100 to $200 per acre. Based on a DWR preliminary estimate, agricultural land use practices in California could cost about $5.3 billion by year 2030.[1]

Box 2-3 BDPAC Working Landscapes Approach

The working landscape is defined as an economically and ecologically vital and sustainable landscape where agricultural and other natural resource-based producers generate multiple public benefits while providing for their own and their communities' economic and social well-being.

[1] Cost estimate = $5.3 billion, determined as follows: Total cost is the sum of three components: (A) financial assistance, (B) technical assistance and (C) land acquisition where A = State of California estimate of unmet federal need for conservation cost-share programs = ($80 million/yr) X (25 yr until 2030) = $2 billion; B = State of California estimate of unmet need for field staff = (800 persons) X ($90,000/yr/person) X (25 yr until 2030) = $1.8 billion; C = conservation easements on about 9% of 11.4 million total acres of farmland = (1 million acres) X $1500/acre = $1.5 billion; A + B + C = $2 billion + $1.8 billion + $1.5 billion = $5.3 billion.

Major Issues Facing Agricultural Lands Stewardship

There are major issues related to improving agricultural lands stewardship in California. There are issues about mixing economic endeavors with environmental goals and economic markets. Increased focus on this strategy is necessary to implement regional integrated resource planning and management, and demonstrate to the public the measurable benefits of stewardship.

Landowner Concerns

Landowners are concerned that environmental programs that help growers improve habitat might attract more threatened and endangered species affecting landowners use of land. Thus some landowners are reluctant to be involved with government agencies, even though some of these agencies might help landowners to comply with real regulatory requirements. Federal Endangered Species Act assurances can only be granted by the U.S. Fish Wildlife Service and the National Marine Fisheries Service. In order to determine what type of species must be covered and possible protective measures that may be required, surveys are necessary to determine what species are present. This only increases landowner concerns that they will be subject to increased restrictions if the presence of endangered species is verified on their property.

Some landowners question how they can adequately maintain their privacy and, at the same time, satisfy the public need for information of farm activities supported by public resources. In addition, there is landowner confusion regarding what type of assurances can be provided. A perspective is that the economic return from certain land stewardship programs may often be less than the return from other options for land use, especially when urban development is an option.

Lack of Information

There is a lack of scientific, economic, social and environmental studies and monitoring of agricultural lands stewardship programs to evaluate their merits for ecosystem restoration, water quality, and agricultural economics for large and small agricultural operations. There are conflicting reports about the compatibility of certain agricultural lands stewardship and ecosystem restoration programs. In order to justify public investment in stewardship, there must be accountability in terms of monitoring.

Complex Regulations and Programs

Institutional regulations and programs are complex and sometimes conflict. Agricultural landowners may be discouraged when developing a stewardship program for multiple purposes such as water and soil conservation, ecosystems restoration, floodplain and wetlands management, water quality and land use planning. The regulations may seem intrusive to the private landowner but essential for those responsible for environmental protection and restoration programs.

Funding

California has traditionally received proportionally less funding for USDA Farm Bill's conservation provisions relative to its agricultural standing, the value of the threatened resources and the population served. Although California farmers and ranchers provide more than 13 percent of the nation's food and fiber, they historically receive less than 3 percent of federal farm conservation funding.[2] Commodity support programs influence stewardship management. California is dominated by specialty crops rather than traditional price-supported commodity programs. The funding inequities of the Farm Bill will become increasingly apparent in the future as production of California cotton, alfalfa, irrigated pasture, and possibly rice decreases and as specialty crops increase.

Regional Cooperation

Without regional cooperation, private landowners may be frustrated in reaching their management goals by adjacent operations or watershed activities that do not contribute to better management for environmental functions and values. These values include protecting and reestablishing riparian corridors or water quality within a watershed.

State Policy Goals

In general, land use is a local planning issue subject to local regulation. Statewide planning goals or restrictions may be seen as an intrusion on local governmental powers. Second, is the conflict between private property and public commitments? Many landowners prefer programs such as the Williamson Act because these are temporary land-use restrictions that landowners can ultimately "opt out" of if they later decide to sell land to development and the asking price justifies the cancellation penalty. As a result, many landowners are wary that they may lose future economic opportunities by committing to permanent restrictions. Likewise, the public may be

[2] Conservation Reserve Enhancement Program (CREP), Environmental Quality Incentives Program (EQIP), Wildlife Habitat Incentive Program (WHIP), Wetlands Reserve Program (WRP) and Conservation Security Program (CSP).

unwilling to fund the necessary incentive (rental, technical assistance, etc.) programs essential to successful stewardship without a clear understanding of long-term benefits from such programs.

Recommendations to Facilitate Agricultural Lands Stewardship

The following recommendations can help facilitate an agricultural lands stewardship strategy:

1. The State should collaborate with rural and agricultural organizations and coordinate with local RCDs to provide private landowners financial incentives and access to educational resources through public and nongovernmental programs that demonstrate the benefits of agricultural lands stewardship and ecosystem restoration.
   - Demonstrate that stewardship programs can help landowners be good stewards without compromising landowner rights.
   - The program should emphasize that it is voluntary, flexible, and incentive-based strategy.
   - Provide "success" stories to resource managers and environmental organizations to demonstrate that private stewardship can achieve desired environmental benefits.
   - Provide economic information regarding the advantages and disadvantages of land stewardship to compare with other investment choices.

2. The State should create a directory that identifies the appropriate State agency for coordination between the State and federal agencies. Under the State agency coordination leadership, the pertinent agencies should provide staff support for land owners participating in multiple environmental goals and local conservation initiatives. The agencies include the California Department of Conservation's Watershed Grant Coordinator Program, Resource Conservation District Assistance Program, California Department of Fish and Game, USDA Natural Resource Conservation Service programs, California Conservation Partnership Program, and U.S. Fish and Wildlife Service. The agencies should identify opportunities to further institutional coordination, assist landowners in applying for grants funding, and help stakeholder planning and implementation.

   - Ensure consistent, dependable and adequate funding for stewardship assistance, especially the USDA Natural Resources Conservation Service, the agency that has traditionally provided this kind of assistance.
   - Assist landowners with endangered species issues.
   - Document environmental results with accepted standards, criteria and protocol while respecting private land ownership.

3. The State should help landowners implement agricultural lands stewardship plans. Greater State participation would help direct federal funds toward landowner participation and technical assistance.

4. The State should evaluate the socioeconomics effect of agricultural lands stewardship, including a comprehensive assessment of:
   - Regional changes in agricultural production inputs and farm income (including income received from land and water payments) as the result of crop-idling.
   - "True cost accounting" of costs and benefits over long-term and including maintenance for stewardship management approaches.
   - Habitat restoration (including financial on-farm investments and increased recreational opportunities).
   - Annual maintenance expenditures

5. The State should increase scientific studies to assess the environmental, ecosystem restoration and agricultural benefits of agricultural lands stewardship programs. The State should continue research on sustainable agricultural-based economies. The State should continue monitoring and assessing agronomic beneficial effects, including improved air and water quality, and habitat restoration and their associated costs.

6. The State should develop an agricultural lands stewardship performance assessment program based on measurable changes, such as improved water quality, lessened agricultural land runoff (thus reducing local flooding and recharging ground water) and improved habitat.

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